Claims:

1. A method to reduce transgene silencing in transgenic plants comprising the steps of:

a) constructing an artificial polynucleotide that is divergent from a known polynucleotide that encodes a substantially identical protein, and

b) constructing a DNA construct containing said artificial polynucleotide molecule; and

c) transforming said DNA construct into a plant cell; and

d) regenerating said plant cell into a fertile transgenic plant,

wherein said artificial polynucleotide and said known polynucleotide are divergent if less than 85 percent identical for their entire length and have no polynucleotide sequence lengths more than 23 nucleotides that have 100 percent identity.

2. In the method of claim 1, wherein said known polynucleotide occurs naturally in said fertile transgenic plant.

3. In the method of claim 1, wherein said known polynucleotide occurs as a transgene in said fertile transgenic plant.

4. In the method of claim 1, wherein said artificial polynucleotide is expressed in said fertile transgenic plant.

5. In the method of claim 4, wherein said artificial polynucleotide provides an agronomically useful phenotype selected from the group consisting of: herbicide tolerance, insect resistance, drought tolerance, increased yield, cold tolerance, disease resistance.

6. An artificial polynucleotide molecule that is divergent from a known polynucleotide that encodes a substantially identical protein, said artificial polynucleotide molecule is selected from the group consisting of: SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:10, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:21, SEQ ID NO:22, and SEQ ID NO:35;

wherein said artificial polynucleotide and said known polynucleotide are divergent if less than 85 percent identical for their entire length and have no polynucleotide sequence lengths more than 23 nucleotides that have 100 percent identity.

7. A DNA construct comprising: a promoter molecule that functions in plants, operably linked to said artificial polynucleotide molecule of claim 6.

8. A plant cell, plant or progeny thereof comprising the DNA construct of claim 7.

9. The plant or progeny thereof of claim 8, wherein said plant is selected from the group consisting of wheat, corn, rice, soybean, cotton, potato, canola, turf grass, forest trees, grain sorghum, vegetable crops, ornamental plants, forage crops, and fruit crops.

10. A plant cell comprising at least two polynucleotides, wherein said two polynucleotides encode a substantially identical protein and at least one of the polynucleotides is a transgene, and said polynucleotides are less than 85 percent identical in polynucleotide sequence for their entire length and have no polynucleotide sequence lengths more than 23 nucleotides that have 100 percent identity

11. A plant or progeny of said plant cell of claim 10 comprising said two polynucleotides.

12. A plant or progeny thereof of claim 11, wherein said two polynucleotides encode for a herbicide tolerance protein.

13. A plant or progeny thereof of claim 12 comprising said herbicide tolerance protein, wherein said herbicide tolerance protein is selected from the group consisting of glyphosate resistant EPSPS and phosphinothricin acetyl transferase.

14. A plant cell, plant or progeny thereof comprising an artificial polynucleotide molecule of claim 6.

15. A method of detecting an artificial polynucleotide in said plant cell, plant or progeny thereof of claim 14 comprising the steps:

(a) contacting a DNA sample isolated from said plant cell, plant or progeny thereof with a DNA molecule, wherein said DNA molecule comprises at least one DNA molecule of a pair of DNA molecules that when used in a nucleic-acid amplification reaction produces an amplicon that is diagnostic for said artificial polynucleotide molecule of claim 6;

(b) performing a nucleic acid amplification reaction, thereby producing the amplicon; and

(c) detecting the amplicon.

16. A DNA molecule comprising: a polynucleotide molecule that specifically hybridizes to an artificial polynucleotide molecule of claim 6.

17. A DNA molecule selected from the group consisting of: SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, and SEQ ID NO:27.

18. A plant cell, plant or progeny thereof, comprising a DNA molecule selected from the group consisting of: SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, and SEQ ID NO:27.

19. A pair of DNA molecules comprising a first DNA molecule and a second DNA molecule, wherein the first DNA molecule is SEQ ID NO:24 or its complement and the second DNA molecule is SEQ ID NO:25 or its complement and the pair of DNA molecules when used in a DNA amplification method produces an amplicon diagnostic for an artificial polynucleotide of SEQ ID NO:17.

20. A plant cell, plant or progeny thereof, wherein said amplicon of claim 19 is produced from genomic DNA extracted from said plant cell, plant or progeny thereof.

21. A pair of DNA molecules comprising a first DNA molecule and a second DNA molecule, wherein the first DNA molecule is SEQ ID NO:26 or its complement and the second DNA molecule is SEQ ID NO:27 or its complement and the pair of DNA molecules when used in a DNA amplification method produces an amplicon diagnostic for an artificial polynucleotide of SEQ ID NO:18.

22. A plant cell, plant or progeny thereof, wherein said amplicon of claim 21 is produced from genomic DNA extracted from said plant cell, plant or progeny thereof.

23. A DNA detection kit comprising at least one DNA molecule of sufficient length to be specifically homologous or complementary to an artificial polynucleotide of claim 6, wherein said DNA molecule is useful as a DNA probe or DNA primer.

24. A DNA detection kit comprising at least one DNA molecule homologous or complementary to a DNA molecule selected from the group consisting of: SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, and SEQ ID NO:27.

25. A method of detecting the presence of an artificial polynucleotide encoding a glyphosate resistant EPSPS in a DNA sample, the method comprising:

(a) extracting a DNA sample from a plant; and

(b) contacting the DNA sample with a labeled DNA molecule of sufficient length to be specifically homologous or complementary to an artificial polynucleotide selected from the group consisting of: SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:10, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:17, SEQ ID NO:18, and SEQ ID NO:35, wherein said artificial polynucleotide is divergent from a known polynucleotide that encodes a substantially identical glyphosate resistant EPSPS protein, wherein said artificial polynucleotide and said known polynucleotide are divergent if less than 85 percent identical for their entire length and have no

polynucleotide sequence lengths more than 23 nucleotides that have 100 percent identity and wherein said labeled DNA molecule is a DNA probe; and

(c) subjecting the sample and DNA probe to stringent hybridization conditions; and

(d) detecting the DNA probe hybridized to the DNA sample.

26. An isolated polynucleotide that encodes an EPSPS enzyme, wherein said EPSPS enzyme comprises motif SEQ ID NO:34.

27. A plant cell, plant or progeny thereof tolerant to glyphosate comprising an EPSPS enzyme with motif SEQ ID NO:34